REMARKS/ARGUMENTS

Claims 1 - 18 and 23 - 25 are pending, of which Claims 1, 9, 16 and 23 are independent. Claims 9 and 10 are being amended. Claims 19 - 22 have been cancelled.

The Examiner has allowed Claims 1 - 8, 16 - 18 and 23 - 25.

The Examiner has rejected Claims 9 - 15 under 35 U.S.C. §103 for being obvious over various references as follows: Claims 9, 11, 12 and 15 over Kishino et al. (U.S. Patent No. 5,965,978); Claim 10 over Kishino and further in view of Jaskie et al. (U.S. Patent No. 6,410,101); Claim 13 over Kishino and further in view of Toyota et al. (U.S. Patent No. 6,900,066); and Claim 14 over Kishino in view of Peng (U.S. Patent No. 5,726,530).

Independent Claim 9

Independent Claim 9 is amended to recite "A field emission display, comprising: a first substrate and a second substrate opposing one another with a gap therebetween, the first substrate and the second substrate being sealed using a sealant wherein a vacuum assembly is formed between the first substrate and the second substrate in a region encompassed by the sealant; an electron emission assembly ... and an illumination assembly ... wherein the illumination assembly includes a phosphor screen located on a first surface of the second substrate, a metal layer located on the phosphor screen within the vacuum assembly, and an anode input terminal extending from within the vacuum assembly to outside of the sealant, wherein an end of the anode input terminal within the vacuum assembly contacts both the phosphor screen and the metal layer and a portion of the anode input terminal extending beyond the sealant is configured to receive an anode voltage, and wherein the anode input terminal is formed from a transparent conductive material." (Emphasis added.) Support for the amendments may be found throughout the specification and drawings and, for example, in figure 5 and starting on line 17 of page 11 and ending on line 21 of page 12 of the written description and, more particularly, on page 12, line 7. Claim 9, as amended, is not believed to be taught or suggested by Kishino whether taken alone or in combination with the other cited references such

as Jaskie.

Kishino includes the embodiments shown in figures 3, 6 and 8 that show an anode input terminal 6a extending from within a container through an exhaust hole 10 (shown in figure 1(a)) to a getter room attached to the container. These figures also show an anode lead 29 extending from within the getter room through a mounting hole 27 to outside the vaccum assembly formed by the container and the getter room. Kishino also includes prior art figures 9(a) and 9(b) that show an anode electrode 59 extending from within a vacuum container through a sealing agent to outside the container.

First, the embodiments of the invention disclosed by Kishino that are shown in figures 3, 6 and 8 of this reference, do not disclose "the first substrate and the second substrate being sealed using a sealant wherein a vacuum assembly is formed between the first substrate and the second substrate in a region encompassed by the sealant" of Claim 9. As further explained below, the embodiments of the invention of Kishino add a getter room that is in contact with the area between the two substrates, through an exhaust hole, in order to establish a vacuum inside both chambers.

The need being addressed by Kishino appears to be providing a connection between the anode electrode and the high voltage applied to the anode electrode that is safe, easy to connect and capable of being mass-produced. (Kishino, col. 1, lines 55 - 60.) And, the drawback of prior art is described as: "However, when a high anode voltage is applied to the metal-backed layer via the additionally-formed electrode, the sealing agent may result in its dielectric breakdown because of the short distance between the substrates 54 and 56. The dielectric breakdown of the sealing agent may cause undesired current ...." (Kishino, col. 2, lines 19 - 24.) The description of Kishino appears to equate the sealing agent of figure 9(b) with the sidewall 4 of figures 3 and 6 with certain modifications. Therefore, in Kishino, the cited objective appears to be protecting the sidewall of the sealed portion from dielectric breakdown as a result of the high voltage applied to the anode electrode. (See, e.g., Kishino, col. 10, lines 4 - 10 and col. 2, lines 30 - 33).

The solution provided by Kishino to the problem of dielectric breakdown is providing a

getter room which is big enough to include a getter material and create a vacuum. (See, e.g., Kishino, figures 3, 6 and 8, col. 1, lines 38 - 44, col. 2, lines 48 - 51, and col. 10, lines 41 - 43.) Because the getter room is under vacuum, the anode terminal may pass through a portion of the sidewall that is not sealed: "The side wall portion 4 of the container 1 is partially cut away to form an exhaust hole 10 communicated with the inside of the container 1." (Kishino, col. 4, lines 43 - 46, see also col. 2, lines 47 - 48.) "The anode terminal is derived to the end portion of the anode substrate through the exhaust hole of the container." (Kishino, col. 2, lines 57 - 58.) "easily derived from an anode terminal through no hermetically sealed portions." (Kishino, col. 2, lines 47 - 48, emphasis added.) "In the field emission type display device with the above-mentioned configuration, since a part of the metal-backed layer 6 acting as the anode terminal 6a is derived from the end portion of the anode substrate 2 through the exhaust tube 10, the wiring can be derived from the anode without passing through the sealed portion of the container 1. Hence the number of contact points where the side portion 4 contacts with the low-melting glass with a low dielectric strength can be reduced." (Kishino, col. 8, line 66 to col. 9, line 7, emphasis added.)

Accordingly, figures 3, 6 and 8 of Kishino that pertain to the embodiments of the invention described by this reference, and include the getter room, do not teach "the first substrate and the second substrate being sealed using a sealant wherein a vacuum assembly is formed between the first substrate and the second substrate in a region encompassed by the sealant" of Claim 9.

Second, there is no discussion of the material of the anode terminal that is set apart from the side wall by the exhaust hole. As such, the portions of Kishino describing the anode terminal do not teach or suggest "wherein the anode input terminal is formed from a transparent conductive material" of Claim 9.

Kishino also includes an anode lead 28 that extends outside the getter room through a mounting hole 27. (Kishino, figures 3, 6, 8, col. 5, lines 43 - 49.) Kishino also includes a description of the crystallized glass material used for sealing the anode lead in the mounting

hole. (Kishino, col. 5, lines 50 - 55.) However, there is no teaching or suggestion in Kishino as to the type of the materials used for the anode lead or the desirable characteristics of these materials. As such, the the anode lead of Kishino does not teach or suggest "wherein the anode input terminal is formed from a transparent conductive material" of Claim 9.

The prior art figures of Kishino show and describe two substrates sealed together for forming a vacuum inside. However the prior art of Kishino is also distinguished from Claim 9 for reasons set forth below.

The Office action appears to cite to lines 10-17 of column 2 of Kishino for disclosing both "a metal layer" and "anode input terminal" of Claim 9. (Office action, p. 3, middle of first paragraph.) The Office action states that Kishino discloses that "anode terminal or electrode can be formed as a part of metal backed layer or formed differently from the metal backed layer." (Id.) In the description of its prior art figures 9(a) and 9(b), Kishino states: "Usually, the anode substrate 54 and the cathode substrate 56 are hermetically fixed with a sealing agent filled in the spaces between the peripheral portions of them. This sealing agent has a dielectric strength lower than that of the substrates 54 and 56. The anode electrode 59 formed as a part of the metal-backed layer 52 or formed differently from the metal-backed layer 52 and electrically connected to each other is derived to the end portion of the anode substrate 54 in contact with the sealing agent." (Kishino, col. 2, lines 10 - 18, emphasis added.)

Kishino includes a discussion of the material used for the sealing agent as, for example, having a dielectric strength lower than the substrates. (Kishino, col. 2, line 13.) Kishino also includes a description of the crystallized glass material used for sealing the anode lead in the mounting hole. (Kishino, col. 5, lines 50 - 55.) However, aside from the passing mention to having two different materials for the anode electrode and the metal-backed layer, there is no teaching or suggestion in Kishino as to the type or the desirable characteristics of the materials used for the anode electrode, the anode terminal, or the anode lead. As such, the prior art portion of Kishino does not teach or suggest "wherein the anode input terminal is formed from a transparent conductive material" of Claim 9.

In short, neither the prior art portion nor the embodiments of Kishino teach or suggest "wherein the anode input terminal is formed from a transparent conductive material" of Claim 9. As such, the Applicant submits that Claim 9 is not obvious in view of Kishino and remains patentable over this reference.

The Office action has not cited Jaskie against Claim 9. However, Jaskie in combination with Kishino is cited against Claim 10. (Office action, p. 5.) According to the Office action, Kishino does not disclose the anode input terminal formed of material selected from a group consisting of ITO, Ni or Cr but Jaskie (col. 2, lines 24-25) discloses that the anode input terminal is integrally formed with the transparent conductive layer of ITO. (Id.) The Office action concludes that it would have been obvious to one of ordinary skill in the art to modify the anode input terminal of Kishino with a transparent conductive layer of ITO as taught by Jaskie for providing simple manufacturing. (Id.)

As discussed in the response filed on April 26, 2007, to the previous Office action of December 26, 2006, and the Advisory Action of March 12, 2007, the anode electrode 124 of Jaskie is not shown to extend outside the sealant and modifying the anode electrode 124 of Jaskie to extend outside the sealant is not obvious or desirable.

Further, modifying the anode input terminal 6a of Kishino with a transparent conductive layer of ITO, as suggested by the Office action, does not provide simple manufacturing. The anode input terminal 6a of Kishino extends out from the diplay part of the FED and it does not need to be transparent. Therefore, there is no reason to make the anode input terminal 6a transparent or made from ITO. Kishino does not have an issue with preserving the seal between the substrates in order to keep the area in between the two substrates under vacuum because the vacuum is provided by the getter room. In fact the anode electrode extends out from the exhaust hole and there is no vacuum seal between the substrates as explained above. So, transparency would not be a motive to change the electrode to ITO at the anode input terminal.

Also, if the anode lead 28 of Kishino is considered to be the anode electrode extending out of the vacuum area through the mounting hole 27, then again transparency is not a concern

for this part that is located to one side of the display area of the FED. Therefore, there is no reason to change the anode lead 28 of Kishino to ITO.

In short, whether the anode input terminal 6a or the anode lead 28 of Kishino are taken against the "anode input terminal" of Claim 9, aside from the structural discrepancies discussed above, there is no motivation to select the material for either part (6a or 28) from a transparent material.

Jaskie shows a passivation layer 129 that extends out from between a glass substrate 122 and a spacer 134 made from a dielectric material. (Jaskie, figure 3.) "Preferably, deposition conditions are selected so that passivation layer 129 is amorphous. An amorphous material provides an effective diffusion barrier because it lacks the grain boundaries and crystal defects through which gases easily migrate." (Jaskie, col. 3, lines 4 - 8.) The reference further elaborates on the characteristics of the passivation layer as "Passivation layer 129 is at least useful for preventing transmission of one or more contaminants through passivation layer 129 and into interspace region 130. Passivation layer 129 can function as a barrier to contaminants .... Passivation layer 129 is also preferably hydrophobic, so that re-adsorption of water and other oxidizers occurs at a low rate." (Jaskie, col. 4, lines 1 - 7.) The passivation layer is not conductive and cannot be used as an electrode. Further, the types of material disclosed for the passivation layer of Jaskie do not teach or suggest "wherein the anode input terminal is formed from a transparent conductive material" of Claim 9.

As such, even a combination of Kishino with Jaskie does not teach or suggest all elements of amended Claim 9.

Dependent Claims 11 - 15

Claims 11, 12 and 15 depend from Claim 9 and are believed to be allowable for their dependence from an allowable base claim.

Claim 13 is rejected under 35 U.S.C. §103 as being obvious over Kishino and further in view of Toyota and Claim 14 is rejected over Kishino and further in view of Peng. Toyota is

cited for disclosing the type of emission sources and Peng is cited for disclosing the insulation layer; neither cures the deficiency of Kishino in teaching or suggesting Claim 9. Accordingly, Claim 9 remains patentable over the combination of these references with Kishino and Claims 13 and 14, that depend from Claim 9, are believed to be allowable because of their dependence from an allowable base claim.

Therefore, in view of the above amendment and remarks it is submitted that the now pending claims are patentably distinct over the cited references and that all the rejections to the claims have been overcome. As such, withdrawal of the rejections and allowance of the above Application are requested.

Respectfully submitted,
CHRISTIE, PARKER & HALE, LLP

By _____
Richard J. Paciulan
Reg. No. 28,248
626/795-9900

CAH PAS745278.2-*-09/5/07 9:42 AM